Conclusions

Natural Resources Conservation Service (NRCS)

The primary purpose of this case study was to field test the methodology and principles detailed in *The Handbook*. What did we learn from the case study?

- Identify Problems and Opportunities
- Determine Objectives

We found that planning documents and other secondary sources are rich information resources for identifying problems, opportunities, and objectives. They lend a historical perspective. However valuable, we acknowledge that secondary sources are not a substitute for direct public input. As planning in the watershed continues to evolve, public input through hearings and workshops will direct and refine present plans.

- Base Map

We found that 1:24,000 USGS quad sheets were well suited as a mapping base for habitat planning at a watershed scale. Overlaying data on quad sheets using GIS programs (ArcInfo and ArcView) is straight forward and expedites data analysis and the generation of alternative plans. The mapped elements on quad sheets are also extremely valuable in providing researchers with real-world reference points. Personnel with GIS expertise were required to complete mapping tasks.

- Collect Data

Geographic data (GAP, vegetation, soils, wetlands, land cover types, ownership, management, topography, and cultural features such as roads, rail lines, and canals) were readily available in digital form. Other important planning parameters such as slope and aspect were computed from digital geographic data sources using Arc Info software.

Data related to historical vegetation and plant community composition and condition was not available electronically and difficult to find in any form. Field research during several site visits were used to fill these data voids to the extent possible; collection techniques included windshield surveys, river floats, and line transects. Literature reviews and personal communications were also used. The habitat survey evaluation forms in *The Handbook* were useful in recording field data. Field studies provided a general assessment of habitat conditions in the detailed study area and identified some of the factors putting habitats at risk. Typical of most planning projects, additional time in the field would have been beneficial. Photographs and field notes were useful references for later data evaluation and plan and report preparation.

We found the availability of watershed-specific wildlife data inconsistent. Predicted wildlife species presence or absence based on vegetation parameters was available electronically in GAP. Threatened and endangered species and some game species information was available but not in digital form. Information on non-game species and on the status of species populations in general (with the exception of game species) was limited. Literature reviews and conversations with biologists were helpful in providing additional information in these areas.

- Analyze Resources

Responding to the Step 4 analysis questions in *The Handbook* focused our data analysis on the most critical corridor--habitat and matrix

locations and their inherent issues. The questions also helped identify risk factors and validate problems and opportunities identified earlier. The ArcInfo map generated during the analysis process proved to be an excellent foundation upon which to construct alternative plans.

- Formulate Alternatives

We found that layering alternative solutions to previously verified problems and opportunities on the analysis map using ArcInfo as described in Step 5 was a useful procedure. It generated a mapped watershed scale pattern for each layer. Layer patterns could then be combined, discussed, and modified if necessary. The habitat concepts and principles described in Chapter 5 provided a scientifically based conceptual framework for structuring the layers in ways that optimized connectivity and patch relationships to generate a watershed scale wildlife habitat conservation plan. Working directly on 1:24,000 quad sheets, and referencing NRCS Soils Manual information, was an important technique to fine tune plan elements. Using the layering technique, additional alternatives exploring different conservation and development strategies were readily developed using the same GIS program.

- Evaluate Alternatives

Critical review of alternatives by stakeholders in the watershed and outside professionals were invaluable in improving plan quality. The plan evaluation sheets in *The Handbook* were useful. They provided a matrix for general comparative ratings among alternatives with calculations of habitat quantity and linkage. Because the project lacked specific data on plant community condition and the population status of most wildlife species, we believe a generalized comparison among alternatives is compatible with the level of data detail used to prepare the plans.

- Make Decisions
- Implement Plan
- Evaluate Plan

These three steps will be the responsibility of county planners, planning commissions and ultimately elected officials. This case study has provided them with useful data in a GIS format, alternative scenarios and recommendations that will inform the decision making process.

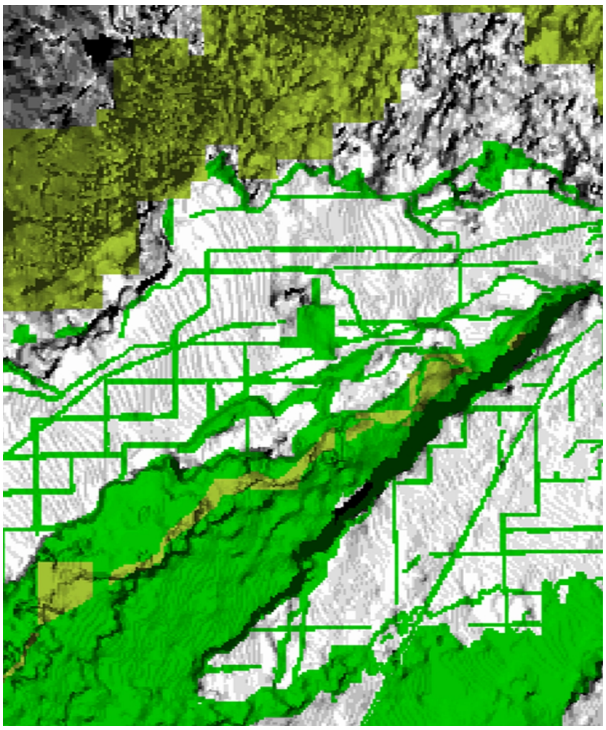
In summary we conclude that the methodology and principles set forth in *The Handbook* work. The methodology provides a rational structure for wildlife habitat planning at the watershed scale. It has procedures to accommodate meaningful stakeholder participation in guiding wildlife conservation as a legitimate land use in the watershed. It focuses data collection and analysis on the most significant wildlife and habitat planning parameters. The scientifically based planning principles provide the conceptual tools necessary to craft a structure of patches, corridors, and matrices that will optimize wildlife conservation within the economic realities of a working landscape. The methodology and principles coupled with GIS technology also afford flexibility to those involved in resource planning. Stakeholders can continue to update and evaluate data, investigate numerous alternatives, evaluate the costs and benefits to wildlife of each alternative, and explore various implementation strategies.

Completing this project verified a point made numerous times in *The Handbook*, (i.e., successful wildlife planning at the watershed scale is all about partnerships). Watersheds like the Henry's Fork with active watershed councils are fortunate; their intimate knowledge of local situations and politics is critical to success.

Stakeholders within a watershed council share many values in common but each has a slightly different agenda and each employs a different strategy to achieve specific goals. Throughout this project it became clear that all watershed stakeholders involved in planning need to be aware of these strategies. All stakeholders will

be more successful when programs and projects in the watershed are coordinated; potential misunderstandings and conflicts are minimized. This is particularly applicable to those involved in planning who do not reside in the region or are relatively unfamiliar with the history of planning efforts.

We also conclude that the NRCS has, and can continue to play, a significant role in watershed-scale wildlife habitat planning either in a leadership position or functioning as a planning partner under other leadership. NRCS programs (CRP, WRP, WHIP, and EQIP), as well as problem-specific conservation practices, can play a significant role in the incremental implementation of a watershed-scale wildlife conservation plan.



Through a coordinated planning effort based on the methodology and principles detailed in *The Handbook*, we can "learn to read the book of external nature and the book of our own nature to discern common patterns and harmonies." They are the substance of a truly sustainable future in the Henry's Fork study area and other watersheds across the county.